WHAT IS CLAIMED IS:

1. An optical scanner comprising:

a plurality of light source units spaced from each other along a first direction, each having

an optical axis along which a light beam from the light source unit is emitted, the optical axes being parallel to each other, and

a position from which the light beam is emitted, the positions being spaced from each other by a predetermined distance at least along a predetermined direction;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned; and

a housing unit that holds the light source units, the deflection units, and the imaging units.

2. The optical scanner according to claim 1, wherein

the predetermined direction is parallel to the second direction, and

the optical scanner further comprises a beam merging unit

located on the axes between the light source units and the deflection unit,

held by the housing unit, and

configured to direct the light beams to the deflection unit

such that distances between the light beams along the second direction are made smaller than the predetermined distance.

3. The optical scanner according to claim 1, wherein

the predetermined direction is parallel to the first direction, and

the light source units are

held by a common support member together, and

detachably held by the housing unit.

4. The optical scanner according to claim 3, wherein the common support member includes a beam merging unit that emits the light beams that have been directed closer to each other such that distances along the second direction between the light beams are smaller than the predetermined distance.

5. The optical scanner according to claim 1, wherein

each of the light source unit comprises an abutting surface

along a direction perpendicular to the optical axis of the light source unit, and

abutting against a common support member configured to hold the light source units together.

6. The optical scanner according to claim 5, wherein the abutting surfaces are held so as to be substantially on a same plane.

7. The optical scanner according to claim 1, wherein

at least one of the light source units comprises a light emission source from which the light beam is emitted, and

the light beam is emitted from the light emission source along a direction not parallel to the optical axis instead of along the optical axis.

8. The optical scanner according to claim 7, wherein

at least one of the light source units comprises a plurality of light emission sources, and

light beams are emitted as the light beam from the light emission sources so as to intersect with each other.

9. The optical scanner according to claim 8, wherein inclinations of planes with respect to a plane perpendicular to the optical axis, the planes on which the light emission sources are located, are adjustable.

10. The optical scanner according to claims 1, further comprising:

a beam merging unit located on the optical axes between the light source units and the deflection unit; and

a plurality of pre-deflection imaging units each

located on one of the optical axes between the beam merging unit and the light source unit corresponding to the optical axis, and

that converges the light beam from the light source unit in the first direction on a deflection plane of the deflection unit, wherein

respective distances between light source units and the pre-deflection imaging units differ from each other relatively to a sequence in which the light source units are aligned in the first direction.

11. The optical scanner according to claims 1, further comprising:

a beam merging unit located on the optical axes between the light source units and the deflection unit; and

a plurality of pre-deflection imaging units each

located on one of the optical axes between the beam merging unit and the light source unit corresponding to the optical axis, and

that converges the light beam from the light source unit in the first direction on a deflection plane of the deflection unit, wherein

convergences of the pre-deflection imaging units differ from each other relatively to a sequence in which the light source units are aligned in the first direction.

12. The optical scanner according to claim 1, further comprising:

a beam merging unit located on the optical axes between the light source units and the deflection unit; and

a plurality of pre-deflection imaging units each

located on one of the optical axes between the beam merging unit and the deflection unit,

that converges the light beam from the light source unit

corresponding to the one of the optical axes in the first direction on a deflection plane of the deflection unit,

arranged on a plane parallel to the first direction, and

united with other of the pre-deflection imaging units into a unitary construction.

13. The optical scanner according to claim 10, wherein each of the light source units comprises at least a light emission source, and the light emission sources are disposed substantially on a same plane.

14. The optical scanner according to claim 11, wherein each of the light source units comprises at least a light emission source, and the light emission sources are disposed substantially on a same plane.

15. The optical scanner according to claim 12, wherein each of the light source units comprises at least a light emission source, and the light emission sources are disposed substantially on a same plane.

16. An image formation apparatus comprising:

an optical write unit that forms latent images on image carriers,

a development unit that develops the latent images as toner images and;

a transfer unit that transfers the toner images onto a sheet of paper, wherein the optical write unit includes an optical scanner having:

a plurality of light source units spaced from each other

along a first direction, each having

an optical axis along which a light beam from the light source unit is emitted, the optical axes being parallel to each other, and

a position from which the light beam is emitted, the positions being spaced from each other by a predetermined distance at least along a predetermined direction;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned; and

a housing unit that holds the light source units, the deflection units, and the imaging units.

17. The image formation apparatus according to claim 16, wherein

the latent images formed by the optical write unit is electrostatic,

the image carriers are photosensitive bodies having the surfaces to be scanned,

the optical write unit scans the light beams emitted from the optical scanner and including color image information respectively onto the surfaces to be scanned to form the latent images,

the developing unit converts the latent images to visual images as the toner images using color toners corresponding to the color image information of the light beams respectively, and

the transfer unit transfers the toner images onto the sheet of paper to obtain a color image.

18. An optical scanner comprising:

a plurality of light source units spaced from each other along a first direction, each having an optical axis along which a light beam from the light source unit is emitted;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned;

a housing unit that holds the light source units, the deflection units, and the imaging units, the housing unit including

a beam converging unit

located on the axes between the light source units and the deflection unit,

configured to direct the light beams to the deflection unit such that distances between the light beams along the second direction are decreased in a sequence in which the light beams are arranged, and

a beam turning unit that turns the light beams scanned by the deflection unit in a sequence corresponding to the sequence.

19. The optical scanner according to claim 18, wherein

each of the light source unit comprises an abutting surface

along a direction perpendicular to the optical axis of the light source unit, and

abutting against a common support member configured to hold the light source units together.

20. The optical scanner according to claim 19, wherein the abutting surfaces are held so as to be substantially on a same plane.

21. The optical scanner according to claim 18, wherein

at least one of the light source units comprises a light emission source from which the light beam is emitted, and

the light beam is emitted from the light emission source along a direction not parallel to the optical axis instead of along the optical axis.

22. The optical scanner according to claim 21, wherein

at least one of the light source units comprises a plurality of light emission sources, and

light beams are emitted as the light beam from the light emission sources so as to intersect with each other.

23. The optical scanner according to claim 22, wherein inclinations of planes with respect to a plane perpendicular to the optical axis, the planes on which the light emission sources are located, are adjustable.

24. The optical scanner according to claims 18, further comprising:

a beam merging unit located on the optical axes between the light source units and the deflection unit; and

a plurality of pre-deflection imaging units each

located on one of the optical axes between the beam merging unit and the light source unit corresponding to the optical axis, and

that converges the light beam from the light source unit in the first direction on a deflection plane of the deflection unit, wherein

respective distances between light source units and the pre-deflection imaging units differ from each other relatively to a sequence in which the light source units are aligned in the first direction.

25. The optical scanner according to claims 18, further comprising:

a beam merging unit located on the optical axes between the light source units and the deflection unit; and

a plurality of pre-deflection imaging units each

located on one of the optical axes between the beam merging unit and the light source unit corresponding to the optical axis, and

that converges the light beam from the light source unit in the first direction on a deflection plane of the deflection unit, wherein

convergences of the pre-deflection imaging units differ from each other relatively to a sequence in which the light source units are

aligned in the first direction.

26. The optical scanner according to claim 18, further comprising:

a beam merging unit located on the optical axes between the light source units and the deflection unit; and

a plurality of pre-deflection imaging units each

located on one of the optical axes between the beam merging unit and the deflection unit,

that converges the light beam from the light source unit corresponding to the one of the optical axes in the first direction on a deflection plane of the deflection unit,

arranged on a plane parallel to the first direction, and

united with other of the pre-deflection imaging units into a unitary construction.

27. The optical scanner according to claim 24, wherein each of the light source units comprises at least a light emission source, and the light emission sources are disposed substantially on a same plane.

28. The optical scanner according to claim 25, wherein each of the light source units comprises at least a light emission source, and the light emission sources are disposed substantially on a same plane.

29. The optical scanner according to claim 26, wherein each of the light source units comprises at least a light emission source, and the

light emission sources are disposed substantially on a same plane.

30. An image formation apparatus comprising:

an optical write unit that forms latent images on image carriers,

a development unit that develops the latent images as toner images and;

a transfer unit that transfers the toner images onto a sheet of paper, wherein the optical write unit includes an optical scanner having:

a plurality of light source units spaced from each other along a first direction, each having an optical axis along which a light beam from the light source unit is emitted;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned;

a housing unit that holds the light source units, the deflection units, and the imaging units, the housing unit including

a beam converging unit

located on the axes between the light source units and the deflection unit,

configured to direct the light beams to the deflection unit such that distances between the light beams along the second direction are decreased in a sequence in which the light beams are arranged, and

a beam turning unit that turns the light beams scanned by the deflection unit in a sequence corresponding to the sequence.

31. The image formation apparatus according to claim 30, wherein

the latent images formed by the optical write unit is electrostatic,

the image carriers are photosensitive bodies having the surfaces to be scanned,

the optical write unit scans the light beams emitted from the optical scanner and including color image information respectively onto the surfaces to be scanned to form the latent images,

the developing unit converts the latent images to visual images as the toner images using color toners corresponding to the color image information of the light beams respectively, and

the transfer unit transfers the toner images onto the sheet of paper to obtain a color image.

32. An optical scanner comprising:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the

light beams on a corresponding surface to be scanned; and

a beam merging unit configured to reflect at least two of the light beams and direct the light beams

so as to be incident on the deflection unit

closer to each other such that distances between the light beams relative to the second direction are decreased, and

substantially along the first direction in the vicinity of an incident position at which the light beams are incident on the deflection unit, wherein

the distances from the incident position to respective positions at which the at least two light beams are reflected by the light merging unit are different from each other.

33. The optical scanner according to claim 32, wherein an increasing order of the distances is in accordance with a sequence in which the light beams are arranged in the first direction.

34. The optical scanner according to claim 32, wherein light beams emitted from at least two of the light source units adjacent to each other on a plane in the second direction are not adjacent to each other relative to the first direction.

35. The optical scanner according to claim 32, wherein the beam merging unit comprises a mirror having a unitary construction and a plurality of independent reflecting surfaces.

36. The optical scanner according to claim 32, wherein incident angles of the at least two light beams incident on the deflection unit decrease as the distances from the incident position to the respective positions at which the light beams are reflected increase.

37. The optical scanner according to claim 32, wherein incident angles of the at least two light beams incident on the deflection unit decrease as the distances from the incident position to the respective positions at which the light beams are reflected decrease.

38. An image formation apparatus comprising:

an optical write unit that forms latent images on image carriers,

a development unit that develops the latent images as toner images and;

a transfer unit that transfers the toner images onto a sheet of paper, wherein the optical write unit includes an optical scanner having:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned; and

a beam merging unit configured to reflect at least two of

the light beams and direct the light beams

so as to be incident on the deflection unit

closer to each other such that distances between the light beams relative to the second direction are decreased, and

substantially along the first direction in the vicinity of an incident position at which the light beams are incident on the deflection unit, wherein

the distances from the incident position to respective positions at which the at least two light beams are reflected by the light merging unit are different from each other.

39. The image formation apparatus according to claim 38, wherein

the latent images formed by the optical write unit is electrostatic,

the image carriers are photosensitive bodies having the surfaces to be scanned,

the optical write unit scans the light beams emitted from the optical scanner and including color image information respectively onto the surfaces to be scanned to form the latent images,

the developing unit converts the latent images to visual images as the toner images using color toners corresponding to the color image information of the light beams respectively, and

the transfer unit transfers the toner images onto the sheet of paper to obtain a color image.

40. An optical scanner comprising:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned; and

a beam merging unit configured to reflect at least one of the light beams and direct the light beam

so as to be incident on the deflection unit,

closer to each other such that distances between the light beams relative to the second direction are decreased, and

substantially along the first direction in the vicinity of an incident position at which the light beams are incident on the deflection unit, wherein the beam merging unit includes a member having

a reflection area/areas configured to reflect only the light beam/light beams from a predetermined light source unit/units, and a transmission area/areas configured to pass the light beam/beams from the light source unit/units other than the predetermined light source unit/units.

41. The optical scanner according to claim 40, wherein the reflection area/areas and the transmission area/areas are alternately placed relative to the first direction, and the member serves as one of

a member configured to pass together non-adjacent light beams

of the light beams that are not adjacent to each other along the first direction and

a member configured to reflect together the non-adjacent light beams.

42. The optical scanner according to claim 41, wherein the member comprises a transparent material serving as the transmission area, and a reflective portion other than the transmission area, the reflecting portion serving as the reflection area

43. The optical scanner according to claim 41, wherein the member comprises:

a reflective member being reflective and serving as the reflection area; and

a hole in a portion other than the reflection area serving as the transmission area.

44. An image formation apparatus comprising:

an optical write unit that forms latent images on image carriers,

a development unit that develops the latent images as toner images and;

a transfer unit that transfers the toner images onto a sheet of paper, wherein the optical write unit includes an optical scanner having:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned; and

a beam merging unit configured to reflect at least one of the light beams and direct the light beam

so as to be incident on the deflection unit,

closer to each other such that distances between the light beams relative to the second direction are decreased, and

substantially along the first direction in the vicinity of an incident position at which the light beams are incident on the deflection unit, wherein the beam merging unit includes a member having

a reflection area/areas configured to reflect only the light beam/light beams from a predetermined light source unit/units, and a transmission area/areas configured to pass the light beam/beams from the light source unit/units other than the predetermined light source unit/units.

45. The image formation apparatus according to claim 44, wherein

the latent images formed by the optical write unit is electrostatic,

the image carriers are photosensitive bodies having the surfaces to be scanned,

the optical write unit scans the light beams emitted from the

optical scanner and including color image information respectively onto the surfaces to be scanned to form the latent images,

the developing unit converts the latent images to visual images as the toner images using color toners corresponding to the color image information of the light beams respectively, and

the transfer unit transfers the toner images onto the sheet of paper to obtain a color image.

46. An optical scanner comprising:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned;

a plurality of lens members corresponding to the light beams respectively and configured to converge the light beams at least in the first direction in the vicinity of a reflecting surface of the deflection unit; and

a common support member configured to position the lens members respectively along the first direction, and support the lens member as one unit.

47. The optical scanner according to claim 46, wherein the common

support member comprises a guide section configured to position at least end portions of the lens members, the end portions at ends of the lens members in the first direction.

48. The optical scanner according to claim 46, wherein the common support member comprises an abutting portion configured to position at least optical axes of the lens members.

49. The optical scanner according to claim 46, wherein the common support member

is formed of a transparent resin, and

comprises lens sections respectively corresponding to the lens members, having a negative refracting power, and formed as windows of the common support member.

50. An image formation apparatus comprising:

an optical write unit that forms latent images on image carriers,

a development unit that develops the latent images as toner images and;

a transfer unit that transfers the toner images onto a sheet of paper, wherein the optical write unit includes an optical scanner having:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the

first direction;

a plurality of imaging units that form an image with each of the light beams on a corresponding surface to be scanned;

a plurality of lens members corresponding to the light beams respectively and configured to converge the light beams at least in the first direction in the vicinity of a reflecting surface of the deflection unit; and

a common support member configured to position the lens members respectively along the first direction, and support the lens member as one unit.

51. The image formation apparatus according to claim 50, wherein

the latent images formed by the optical write unit is electrostatic,

the image carriers are photosensitive bodies having the surfaces to be scanned,

the optical write unit scans the light beams emitted from the optical scanner and including color image information respectively onto the surfaces to be scanned to form the latent images,

the developing unit converts the latent images to visual images as the toner images using color toners corresponding to the color image information of the light beams respectively, and

the transfer unit transfers the toner images onto the sheet of paper to obtain a color image.

52. An optical scanner comprising:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that

form an image with each of the light beams on a corresponding surface to be scanned, and

include a lens shared by the light beams and having no defractive power in the first direction; and

a beam merging unit configured to turn at least one of the light beams at a different position, changes distances along the second direction between the light beams incident on the deflection unit such that the distances decreases or become zero.

53. The optical scanner according to claim 52, wherein the beam merging unit is positioned such that a sum of an incident angle and a reflection angle to and from a turning mirror of the beam merging unit is acute.

54. The optical scanner according to claim 52, wherein at least two of the light source units are positioned opposite to each other relative to an optical axis of the lens in a cross section in the second direction.

55. The optical scanner according to claim 52, wherein distances

between centers of the light beams are equal.

56. The optical scanner according to one of claim 52, wherein a distance in the first direction between centers of a pair of central light beams of the light beams is greater than distances between centers of other pairs of adjacent light beams of the light beams.

57. An image formation apparatus comprising:

an optical write unit that forms latent images on image carriers,

a development unit that develops the latent images as toner images and;

a transfer unit that transfers the toner images onto a sheet of paper, wherein the optical write unit includes an optical scanner having:

a plurality of light source units spaced from each other along a first direction and configured to emit light beams;

a deflection unit that deflects the light beams together and scans the light beams along a second direction perpendicular to the first direction;

a plurality of imaging units that

form an image with each of the light beams on a corresponding surface to be scanned, and

include a lens shared by the light beams and having no refractive power in the first direction; and

a beam merging unit configured to turn at least one of the light beams at a different position, changes distances along the

second direction between the light beams incident on the deflection unit such that the distances decreases or become zero.

58. The image formation apparatus according to claim 57, wherein the latent images formed by the optical write unit is electrostatic,

the image carriers are photosensitive bodies having the surfaces to be scanned,

the optical write unit scans the light beams emitted from the optical scanner and including color image information respectively onto the surfaces to be scanned to form the latent images,

the developing unit converts the latent images to visual images as the toner images using color toners corresponding to the color image information of the light beams respectively, and

the transfer unit transfers the toner images onto the sheet of paper to obtain a color image.